



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,237	11/21/2001	Hiroshi Suganuma	09792909-5265	1922

26263 7590 07/10/2003

SONNENSCHN NATH & ROSENTHAL
P.O. BOX 061080
WACKER DRIVE STATION
CHICAGO, IL 60606-1080

EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 07/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,237

Applicant(s)

SUGANUMA, HIROSHI

Examiner

Audrey Y. Chang

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Remark

- This Office Action is in response to applicant's preliminary amendment filed on November 21, 2001, which has been entered as paper number 5.
- By this amendment, the applicant has not amended the claims.
- Claims 1-8 remain pending in this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-5, 6, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Bloom et al (PN. 5,982,553) in view of the patent issued to Kajiki (PN. 5,694,235).**

Bloom et al teaches an *image display system* (30, Figure 4) wherein the system is comprised of a *light source having LEDs* (32R, 32G, 32B) for *generating laser beams having wavelengths in predetermined ranges of red, green and blue color*. The laser beams illuminate a *Grating Light Valve* (10), which is an *one-dimensional spatial light modulator*, for modulating the laser beams. The modulated laser beams are then *scanned* by a *scanning mirror* (58) to the location of an observer (64) for displaying an image, (please see Figure 4, and columns 7-9).

This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the image display system is a stereoscopic image display system. Kajiki in the same field of endeavor teaches a three-dimensional image reproducing system that is comprised of modulator for modulating the light from light sources and scanning system for directing the modulated image light to

Art Unit: 2872

produce stereoscopic image (15, Figure 9). It would then have been obvious to one skilled in the art to apply the teachings of Kajiki to modify the image display system of Bloom et al to make it capable of displaying stereoscopic images for the benefit of three-dimensional effect to the image displayed.

With regard to claim 2, Bloom et al teaches that the direction of scanned light is in 45 degrees with respect to the array direction of the Grating Light Valve. Although these references do not teach explicitly that the scanning direction is perpendicular to the array direction such variation is considered to be an obvious matters of design choice to one skilled in the art for the benefit of making the display system to have different arrangement that may be suited for different viewing purpose.

With regard to claims 4 and 6, Bloom et al does not teach explicitly to include a diffusion panel. Kajiki teaches to use a *diffusion plate*, (which known in the art having the ability of making the light have more uniformly distributed intensity), for reproducing and displaying the stereoscopic image to the observer. It would then have been obvious to one skilled in the art to apply the teachings of Kajiki to modify the image display system of Bloom et al for the benefit of providing more uniformly distributed image to the observer.

With regard to claim 6, Bloom et al teaches to use a lens (50, Figure 4) to *collimate* the modulated light from the Grating Light Valve. Bloom et al also teaches that an image forming lens such as (53 or 55) may be used to focus the image light, (please see Figures 6 and 7). It is known in the art that an image focusing lens has the inherent property of performing Fourier transformation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

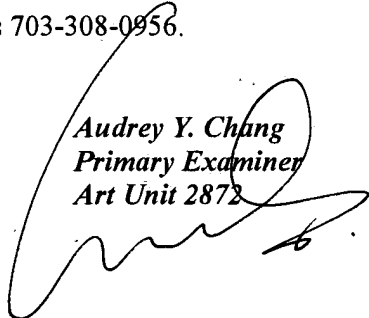
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone numbers for the organization where this

Art Unit: 2872

application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Audrey Y. Chang
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.
June 27, 2003